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(Edited by)

**PAPERS ON ACCOUNTING
AND ACCOUNTING HISTORY**

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Massimo Costa

**A 20TH CENTURY SCHOLAR OF ACCOUNTING AND
BUSINESS ECONOMICS THROUGH HIS MAJOR
WORKS: PROF. NICOLA COLLETTI***

1. Biographical and Academic Notes

Nicola Colletti was born in Palermo on January 1st, 1914 and there dead on July 6th, 2000. In the second half of the XX century was the most famous scholar and professor of Accounting at the University of Palermo and his school lasts there today through his disciples of first and second generation. This paper has the aim of outlining his work and, if it is still alive, his heritage for Business Economics and Accounting (¹) of nowadays. To do so, we have to place before some bio-

* This paper was presented at the 3rd *Accounting History* International Conference, 18th-19th September 2003, Siena.

(¹) A preliminary note deserves the critical translation from any Italian nouns into English. We translate “*ragioneria*” with ‘Accounting’, even if the two traditions are not sharply coincident. Particularly difficult is the translation of “*azienda*”: as a matter of fact, ‘company’ is a juridical term (too narrow even for the field of firms, that have not always the structure of a ‘company’), ‘firm’ or ‘enterprise’ refer to a particular economic unit (where “*azienda*” refer to every kind, profit or not for profit, of organization), ‘organization’ refers more to the *social* unit (where “*azienda*” is thought under a prevalent *economic* point of view and, in many schools like in Colletti’s one, it refers more on the complex of things which are to be done than to the collective body who performs them). Then, faithful to its etymon (“*azienda*” from Latin “*facienda*”, then ‘things to be done’), we chose ‘Business’ (with capital letter, so distinguishing from the common meaning of the term) because it means ‘to be busy’, then ‘the state of having a lot to do’, then again ‘things to be done’. As a consequence of that,

graphical and academic notes which set the Author in the light of his times and social environment.

His father, Settimo Colletti (died in 1946), had married Vittoria Marsala (his mother, died in 1968), and was a trader. In this family he was the elder of four sisters ⁽²⁾. For trade issues his family moved, at the end of the Great War, from Sicily to Trento where the young Colletti, after having finished compulsory school and ‘low gymnasium’ attended to a commercial high school, perhaps in order to join after his father in business.

But Nicola Colletti was never a businessman but a scholar. Furthermore, never married, he devoted the most of his life to studies, teaching and building a school. In 1930 the family came back to Palermo where he continued and finished in three years high school at one of the most famous Palermo’s school: the “Istituto Duca degli Abruzzi”. There he had the chance of having two great teachers, not known in international contexts but quite famous in regional history of Accounting and business disciplines: Emilio Ravenna, teacher of Accounting, and Angelo Aldrighetti, teacher of Business Technique.

After high school, finished with the best marks, he attended to the local “Istituto Superiore di Economia e Commercio”, ancestor of the Faculty of Economics of University of Palermo now we have. There, just a few months after being transformed in the Faculty of “Economia e Commercio” ⁽³⁾, he took his degree in 1937 with a dissertation whose title was “Revaluations by means of monetary adjustments in industrial

“*economia aziendale*” (the *new science* founded by Gino Zappa from 1926) becomes ‘Business Economics’, *i.e.* the Economics of above mentioned Businesses; and it is ‘Economics’, not ‘Administration’, because in its goals it would have been the *true, concrete* Microeconomics (opposite to the General Economics), even if Teodoro D’Ippolito, disciple of Zappa and master of our Colletti, criticized that choice, arguing that it is really a Business Administration science (and only very partially a true ‘economics’). But the term was accepted by nearly all the Italian community of scholars (and today it is still so) and we have no title to change it now translating in English.

⁽²⁾ Out of a half-brother, had by his mother in first marriage and died while fighting in the first World War.

⁽³⁾ In the just same year, Teodoro D’Ippolito, one of the oldest disciples of Gino Zappa, arrived to Palermo where he was named dean of the new born Faculty, office that was held by himself until after the Second World War.

firms”⁽⁴⁾. His tutor was another famous Sicilian scholar of Accounting, Pietro Palumbo, and the same led him for a few years after having taken the degree⁽⁵⁾.

His first work was as teacher of Accounting at a private commercial school, held by another business economics scholar of those days, Emilio Panciera, who retained always as one of his best friends until his dying in seventies. While being voluntary assistant of Palumbo, he published the first part of his most famous work (1941): “The Number in Accounting and in Business Economics”. In 1944 Pietro Palumbo died and potentially Colletti had no more direct references at the University. At this moment, however, he had his turning point of his life: the beginning of the great sodality with Teodoro D’Ippolito, whom he became disciple of.

Under the leadership of that great Zappa’s disciple and after alone but on his tracks, he produced all his works. The most famous writings of D’Ippolito and Colletti were published by a little publisher, “Abbaco”, whose majority shareholding were held by the same D’Ippolito and, after his death, being the same without heirs, were left to Colletti himself. This publisher does not exist any more and now it is very hard to find his works out of the University of Palermo or the private and public libraries then bought them⁽⁶⁾. The leadership of D’Ippolito was very strong as we have just said and it is not possible to recall now the meaning and deepness of his work, certainly of greater degree than the same his Palermo’s disciple; we have just to note that, even never having had the chance to know him, Colletti followed tightly Zappa’s work as well, more – if possible – than the same D’Ippolito with the passion of neophytes. As a matter of fact, one of his works, “Programmes and Choices in Business Economics”, published only a few months after Zappa’s “Productions” (1957), quoted abundantly Master’s work, nearly as a holy text.

⁽⁴⁾ From now on, all titles of Colletti’s works are directly translated in English.

⁽⁵⁾ In the same year he ended his compulsory military service in infantry as officer. He was too recalled up to military service in the Second World War after which he became captain of infantry.

⁽⁶⁾ Really, in youth, his works were published by another local publisher, the IRES (Industrie Riunite Editoriali Siciliane), but these are much more difficult to find than Abbaco’s ones.

Step by step, he arrived to the office of Full Professor in 1965. Essentially he was always ‘The’ Professor of Accounting of Palermo (at least after the leaving of D’Ippolito in 1959), but he taught industrial and commercial technique, professional and banking technique and State accounting too; essentially he taught in Palermo, but he was also appointed to courses at Messina University for not few years. Rapidly he became the leader of the local “Institute of Accounting and Business Economics Researches”, after named “Institute of Business Economics Sciences” ⁽⁷⁾. Oddly, however, he never took a course of Business Economics, leaving them before to an old colleague of Palumbo, Francesco Monastra, and after to his own disciples, who nowadays still keep them.

Aside University, he had a moderate professional activity, limited to some high advice or audit offices. He also filled various offices in the provincial association of certified accountants of Palermo ⁽⁸⁾. He promoted a lot of cultural initiatives that now it is impossible to remember, even in synthesis: we remember only the editorship of the Centre of Study of Accounting and Regional Administration, by himself promoted and particularly felt in importance. Notwithstanding this and other participations to public committees he was able to be always far away from political connections: even during fascist regime he avoided to sing the praises of ‘corporativism’, the official economic doctrine of the dictatorship. Certainly he should be not too far from the politicians (nearly all Christian Democrat or, at any rate, of moderate parties) who ruled Sicily since forties till nineties and who gave him not few public offices, but he remained always self-restrained and the only not professional association he entered was the Rotary Club. Really, it is quite difficult to find a direct and significant relationship between this scholar (nearly shut up in his ivory tower) and times when he leaved: his studies neglected explicit political and social references and, when he did not so, these references were very soft, very far from Sicilian context where he spent all his life, like in searching either of a-

⁽⁷⁾ Nowadays that Institute does not exist any more because of its merging with others to constitute the “Department of Finance, Business and Economics”.

⁽⁸⁾ The most important were: certified accountant since 1937, certified auditor since 1955, from 1975 to 1978 Chairman of the Provincial Association, in the 1979 member of the National Council, from 1998 to death, Honorary Chairman of Provincial Association.

priori truths or of a general (and ultimately abstract) contribute to society and economics.

Perhaps we feel more the *spirit of times* in doctrinal issues, where he proved himself to be aware of and taking part in the great transformation were occurring in epistemology and methodology of social sciences. In next section, there will be the chance to underline when such a new attitude emerges in his work, even if not always fully exploited. In that, probably, an important (and, after all, negative) role was played by the relative self-sufficiency that Italian business studies experimented for a few decades after the great Zappa's scientific revolution.

Along all his life he produced some one hundred and eighty works of various subjects: Accounting, Business Economics and Professional Technique above all. But his major production was concentrated in a great project of research which after we will tell about, the famous "Trilogy" of Business Economics and other volumes of momentousness we will tell about after as like. His scientific production was gathered in three decades (1941-1970); afterwards he published only short papers either on magazines or records of scientific symposia or onto his personal publisher, the mentioned "Abbaco".

In 1980's his disciples were already mature scholars and professors of business disciplines. In 1989 he retired to private life for the old age, reducing even more his research activity, and his public happenings became more and more rare and always on strong encouragement by his disciples' affection.

A last note deserves finally his personal temper: who knew him, all who knew him, remember him for his politeness, moderation and elegance as well in dressing as in speaking and in behaving, a true Sicilian gentleman of old days.

2. The Trilogy of Business Economics Studies

2.1 Three General Categories in Business Economics: Experience, Number, Time

As we have said, even if Colletti was primarily a disciple of

D'Ippolito, he came back apparently towards a very strict orthodox interpretation of Zappa's revolution of "*Economia aziendale*". As a matter of fact its chief work was a *Trilogy*, written in practice along all his life, devoted to Business Economics as the unifying science of business administration studies. Furthermore, as in Zappa's most famous works, that Business Economics is shared currently into three parts: Organization, Management, Recording (this last one natural field of Accounting, true core of Business Economics and always privileged by himself in didactics and research). Sometimes, aside these three parts or *moments*, one finds a 'general' Business Economics.

In practical developments of his research, however, that formal partition was overwhelmed by a new one founded upon three transversal categories, for each of one we have a particular book of the Trilogy:

- the *Experience* in Business Economics;
- the *Number* in Business Economics;
- the *Time* in Business Economics.

Why these categories and why this order? The Author never answered to the question nor explained directly his deepest thought. The historian must reconstruct it inductively from reading carefully his work and cleaning it up from its over-refined style which really does not justice to his genius.

As a first element of judgment let us consider the fact that the first published book was the *Number* (1941-1954), after came the *Time* (1948-1955), at last the *Experience* (1968), curiously the first of the Trilogy. This last one, furthermore, was published not without hesitation and some evident discontent of the same Author. It is likewise evident that these three categories are 'metadisciplinary' tools of dealing with knowledge which assume an epistemological value in Business Economics so important that the same discipline could not be investigated profitably without them.

Before going beyond in the study of his thought, let us set a general note on his general method of research. Apparently we find a formal and deductive development of a general thought, be it a philosophical one or a business economics one: uselessly we may look for empirical basis or reports of case studies, for example. This is probably due to the

need of building a ‘new’ science as he still perceived Business Economics, where it was necessary depicting not few scenes of a big picture, but also to a particular conception of knowledge (constructivist *ante litteram* we might say as we will argue below). But even if that is true, especially in the Trilogy (the most theoretical work of his life), in the background emerges here and there too a care toward practice surely derived from his high and rarefied professional activity where he could observe carefully (*quasi in vitro*) some particularly meaningful evidence without an institutional programme of empirical survey or the resort to appropriate researches; this *naïf* resort to empirical ground (in words, through personal profession), anyway, was generally used in those days and sometimes nowadays is too.

The basic problem where the Trilogy comes from is just the concept of *Business* (here used with capital letter – let us just remember – as a gross translation of the Italian voice “*azienda*”). ‘Business’ is – in Author’s opinion – an artificial being consisting in a *technical and economical dynamic system of operations* as well as it was in D’Ippolito’s thought; investigating in it leads naturally to the conclusion that the system of operations is not intelligible without the consideration of those three basic categories (Experience, Number, Time): first one at a glance seen as a sort of knowledge embedded in Business before recording have taken place, last ones as the measurement and recording of the action caused by Business along the four-dimension space-time field. After all we find in Experience’s *Preface* a justification for the odd inversion of order among the volumes of Trilogy: Experience is logically *before* its recording in space and time, but while investigating Business first things emerge are ‘quali-quantitative-numerical aspects’ (*being*) and ‘quali-quantitative-temporal aspects’ (*becoming*) and, only *after* and never definitely, the ground experience where both come from. Yet, experience, coming ‘before’ and ‘after’ the accounting determinations spread in space and time, underlines an empirical attitude of the school (already we find it strongly in D’Ippolito) even if in a ‘philosophical’ sense of the word and so this attitude was carried out, as we said before, by means of purely deductive argumentations and certainly not in a trivial way.

As we suggested above, Trilogy does a new and not conventional partition of Business Economics emerge, really divergent from the clas-

sic (in Italy, of course) distinction in Organization, Management and Recording, even if this last one was always formally accepted by Colletti.

In our opinion, Number and Time, very strictly tied each other could fill together the field of a proper Accounting, thought as a discipline of quali-quantitative ‘Determinations’ ⁽⁹⁾ of Business, superposed – when not very confused – with Zappa’s Business Economics ⁽¹⁰⁾. So both are but Business Economics from accounting scholar’s point of view, who wants to go beyond the arid figure of numbers and others symbols dealt with so that he can study phenomena and relations among them. The same scholar, however, feels the existence of a substance somewhat ‘inexpressible’ by ‘determinations’ that is ‘deeper’ but not for that less important; by there, perhaps, the need to go back toward an Experience whose borders appear undetermined before determinations have arrived but whose contents appear diminished after they have. In such a way, Accounting gets over the limited field of Recording above remembered to include together Number and Time (also in Organization and Management then) and to give birth to a potential bipartition of Business Economics: at one side we should have a discipline nearer to action, to praxis (Experience), at the other side another more abstract and nearer to knowledge (Number and Time). If we call the former ‘Business Administration’ and the latter ‘Accounting’, we shall find it is that one nowadays largely accepted in Italy as a fundamental partition of Business Economics and recalling itself to the thought – among others – of another very famous 20th century Italian accounting thinker, Aldo Amaduzzi, who shared the ‘Business’ in its ‘System’ and its ‘Order of Recordings’. But all that remains an inductive and historical reconstruction because Colletti never devoted much time in explaining the deep structure and meaning of the *Trilogy*.

From now on, nevertheless, we want to represent chiefly his theory (even if through ‘our’ lenses) and then the reader has to consider the use of pronoun ‘we’ as a rhetorical tool for referring to *his* thought, out of explicit commentaries or our notes in parentheses, of course. The

⁽⁹⁾ And ‘Determinations’ – let us just recall now – were explicitly the field of Accounting according to his master, Teodoro D’Ippolito.

⁽¹⁰⁾ The *former* devoted to static approximations, the *latter* to dynamic developments, but this distinction appears less important at the moment.

exposition might seem quite large in description but it is only a very short summary of his complex thought and it is yet necessary for a fair view of his contribution to Accounting.

2.2 Experience

“Experience” is essentially a volume on epistemology and on knowledge in Business Economics. In reading it we find experience is – as said above – *knowledge embedded in business economics thought and action* and it is the ground where expressions (‘number’ and ‘time’) and relations among phenomena are built from.

Starting from his master’s conception of Business as a *unitary* system of operations, he assumes the system of experience has to be *unitary* likewise, even in presence of various evidence according to different functions where experience occurs.

In looking for this deep and unitary meaning of experience, Colletti goes back over origin and evolution of the concept in history of philosophy in order to reach a satisfactory conception of it for our goals. He rapidly runs over ancient, medieval and modern thought. After he stops quite on Kant about whom he shows a particular favour; particularly meaningful appears his quotation of the very famous sentence: «No knowledge in us comes before experience and every kind of knowledge begins with it». After, he goes again rapidly over contemporary thought where, at last, he subscribes and adopts ⁽¹⁾ the structuralist perspective of Italian philosopher Pastore who, by means of his ‘logics of empowerment’, dissolves beings in relations: every being is and varies according to the relations he has with other beings and, then, the more relations has, the more ‘powerful’ it is.

This historical survey leads to a variety of concepts of experience; out of these, Colletti defines its own definition: “Experience, in general knowledge, is the result of *objective* knowledge and *subjective* contributions of thoughts, observations and direct experimental action”. In a formula, then, we may say:

⁽¹⁾ But, anyway, he never came to a complete adherence to a philosophical school, but remained always in a sort of pluralistic eclecticism.

Experience = Objective Knowledge + Subjective Contributions

Different from experience and partial are the concept of ‘experiment’ and ‘experimental method’ even if a large part of human knowledge is due to them.

Coming to the specific domain of Business Economics this difference becomes larger because repetition of proofs, typical of experimental method, is here practically impossible. Nevertheless, Business Economics is an ‘experimental’ science – that is subject to experience – in a wider sense than the mere possibility to be liable to ‘experiments’.

More, Business Economics is an application discipline and then experience has not only a theoretical role but even a practical one in inspiring administrative action.

Two main characterizations of business economics experience are: *irreversibility* of human action and *risk* of every free action. After a so shaped experience, come all other forms of knowledge in Business Economics. Phenomena of experience require aetiology and then a science of Business Economics. To make operative this science we have to do this experience, mainly qualitative, become quantitative. Here determinations of “Number” and “Time” come in (and then Accounting does) and it is important to remember experience inspires mathematical quantification and not *vice versa* and that such a quantification may lose fundamental qualitative aspects of experience which, on the contrary, could be the most important ones.

Coming back to the distinction between ‘objective’ ⁽¹²⁾ and ‘subjective’ experience, now we add that the former is simply history of a scientific system. In our field that means the acknowledgement of the opportunity of a *history of Accounting and Business Economics* as a “historical knowledge and historiographical reconstruction of operations and institutes in order to explain the progress of various manifestations of past experiences to join until present ones” but also as a “useful history of doctrines of Accounting and Business Economics”.

Importance granted to experience does not qualify Colletti as a trivial empiricist. To demonstrate this argument it is important to remember experience in his thought does not only come *before* other knowl-

⁽¹²⁾ One recalls that ‘objective’ here correctly means ‘objectivated’ and not ‘absolute’.

edge but also *after* it in a sort of undeclared hermeneutical cycle. As a matter of fact the Author says that before experience we have the ‘hypotheses’ pre-arranging it: in determining these last ones not only preceding experience is important (and here we read the above undeclared hermeneutical approach) but, above all, human *intuition*, giving by that way a fundamentally creative nature to scientific knowledge (and finding so another undeclared epistemological attitude, this time toward constructivism).

Other general characterizations of business economics experience are:

- it must not be investigated as separated from a more general ‘social’ experience which we distinguish inside only by convention;
- every piece of experience is never isolated but changes others that are in relation with it (according to above mentioned ‘logics of empowerment’);
- experience is oriented too toward present and future because it determines the ‘possibility’ of future experience through the ‘education of operator’s spirit and conscience’.

After having been investigating about the general problems of experience in Business Economics, Colletti looks after particular problems of experience in the traditional parts of Business Economics: Organization, Management and Recording-Accounting.

Without going any further in deepness through his thought, we may limit our survey on the most remarkable passages.

About Organization we remember that:

- if we consider this discipline as regarding business ‘bodies’, that is human beings with their characters, needs, aspirations, it becomes really a synthesis of human ‘experiences’ much more than other parts of Business Economics;
- quality of experience in organizing Businesses is evaluated in accordance with the skill of anticipating future dynamics of relevant relations;

- it is impossible to cut off sharply experience in Organization from the same in other parts of Business Economics and particularly in Management;
- out of the theme of experience we deduce a tight closeness in organization theory to the 'Human relations school' of Mayo.

About Management we remember that:

- quality of experience in managing Businesses is evaluated in accordance with the results of programmes and choices of management as read through the 'systems of qualitative and quantitative symbols' supplied by the Accounting;
- experience in Management above all is founded upon 'mistakes' that are here formally defined;
- deeper analysis of experience goes on through the three correlated 'moments' of 'saving', 'investments' and 'consumption';
- out of the theme of experience we deduce a tight closeness in management theory to Zappa's one of the very famous *Productions in firm economics* of 1957.

About Recording-Accounting we remember that:

- Recording is the mean of *representation* of experience and, then, the link with successive "Number" and "Time";
- every recording brings an unavoidable reduction of complexity from the unity and continuity to the plurality and discontinuity and from the natural dynamics of living experience to the conventional statics and kinematics of recorded experience;
- fixing experience in symbols refers to a particular semiotic study, the *semantics*, as a basic tool for "a serious study of all recordings of Accounting";
- Recording is not only about *past* experience, but about perspective *future* one too;
- evaluation of experience through economic results should have been evolving from the research of *greatest* profit to the research of *best* profit, according to social canons and all that

through a progressive improvement of aptitude of symbols to represent qualitative and not only quantitative experience.

2.3 *Number*

“Number” was the first published and rightly the most famous volume of the Trilogy. It presupposes the existence of a traditional Accounting where every relevant fact or phenomenon is coded in quantitative symbols, that is in ‘numbers’. Against this view Colletti raises objections because “business economics phenomena are not easy to be represented in rigorous terms”. As in the best Zappa’s tradition the *pars destruens* prevails anyway over *pars costruens* and, for that, the reader could find in his thought a lot of questions rather than answers (a sort of ‘problem setting’ attitude more than a ‘problem solving’ one).

In spite of that, he is fully conscious of the power of number and of its omnipresence nearly in all disciplines: wherever we have qualitative aspects, we are always willing to consider only the ‘quantitative’ point of view of the same in order to operate better with them. The question is not, then, to ban numbers from Business Economics, but to compare adequately their uses in business economics disciplines *vs.* mathematical and statistical ones so that we can avoid the commonly spread confusion there is about all that.

First of all we have to consider the genetic derivation of Business Economics from Mathematics (and, precisely, the fact that Business Economics was born from Accounting and that this last one was borne from Arithmetic). Not for that, however, Business Economics and Accounting are simply ‘discipline of numbers’: even in Accounting, traditionally the most quantitative business economics discipline, numbers are semantic expressions with a ‘plurality’ of values which is really opposite to the abstract ‘oneness’ of the same in Mathematics.

The development of his research is shared into two parts: the former is devoted to general problems of ‘number’ in recording quantitative aspects of business phenomena ⁽¹³⁾; the latter is a development of

⁽¹³⁾ The first edition of the book was limited to this part. Not without reason, then, he called it “Number in *Accounting* and Business Economics” for “Recording” in

general assumptions applied to particular problems of ‘number’ involving quantitative aspects through managing some business problems (determination of costs, price fluctuation, liquidity problems). This second part is very rich of suggestions and interesting remarks but it seems impossible to recall them now properly; in what follows, then, we are going to tell about just the chief passages of the first one.

Beginning from the same definition of number, Colletti finds this task to be very hard to approach for the complexity involved in it. He gets his first ideas by a German scholar of positivistic school, Natorp, who in its “Die logischen Grundlagen der exacten Wissenschaften”, defines number essentially as ‘measurement’ or, more exactly, as a comparison between a thought term and an observed one. This general or ‘pure’ number is after used by sciences to represent, gather and enumerate their concepts, phenomena and problems. By this passage, numbers are no more pure or ‘autonomous’ but they are *symbols* of qualitative concepts and so are numbers used in our disciplines.

Then the essence of business economics coordination⁽¹⁴⁾ is *quality*, but this quality is inevitably measured by *quantity*. Translation from qualitative phenomena to quantitative symbols is defined as ‘evaluation’. Is then accounting ‘evaluation’ equivalent to a common ‘measurement’? In Colletti’s thought if ‘measurement’ is, generally speaking, an *objective* process, ‘evaluation’ is *not* because it is mainly *subjective*; if, otherwise, ‘measurement’ is, always generally speaking, a simple outward expression of phenomena, ‘evaluation’ is a form of measurement, even if only a very particular one.

This undetermined relation between ‘numbers’ and ‘phenomena’ is due mainly to ‘quality’ which, in its complexity, is never absolutely easy to translate in ‘quantity’. Nevertheless, the same ‘numbers’, supplied by Accounting, are the core of business economics theory, whose task should be to give comparative judgments about ‘quality’, *i.e. nature and convenience* of considered business coordinations. Then Busi-

Zappa’s systematic was the very field of Accounting while business economics phenomena here remained only in the background.

⁽¹⁴⁾ Really he spoke, as Zappa did before him, of ‘combinations’; but in English such a word would sound quite taken from a chemical lexicon and then we prefer the term used above of ‘coordination’.

ness Economics lives in a natural contradiction: he has to observe and judge qualitative phenomena while it has but a quantitative language which to read them by. “Number” differently than in Mathematics, is nothing in it without looking at underlying qualitative world.

Unfortunately – the Author complains – there would be still lots of prejudices and traditionalism about Business Economics and particularly about Accounting with its biggest part of ‘bookkeeping matter’, too often identified as an ‘arid’, ‘boring’ and ‘abstruse’ applied arithmetic. Really it could become so if we forget to insert such ‘bookkeeping matter’ in proper business economics contexts, but otherwise it will deserve a very better regard.

Investigating business economics ‘numbers’ by mathematical and logical laws is not enough for us: they are, as a matter of fact, *universal and eternal* laws while we need opposite tools of interpretation. Perhaps, then, it would be unnecessary the resort to advanced mathematical tools that may give just the illusion of managing complexity.

Out of general clauses, where we can find concretely ‘numbers’ representing administrative phenomena? Mainly in accounting documents and also in theoretical ‘constructions’ of Business Economics: accounts, reports, balances and other statements, analyses of costs, and so on. There, in documents and ‘constructions’, we may and have to study the delicate passage from *phenomena* to *symbols* through observations, hypotheses, conjectures that human operators do every day in their work. There, we may find too how as a system of numbers or a system of symbols represent a system of judgments which make heterogeneous in substance items become homogeneous in appearance as it happens, most of all, in financial statements ⁽¹⁵⁾.

Numerical symbols cover almost all the domain of administrative symbols (and in that we get a traditional prejudice against the presence of qualitative symbols but, perhaps, when the Author wrote – let us remember in 1941 – that is was generally true) and are subdivided into two

⁽¹⁵⁾ This relativism – moderate maybe – takes a quite undetermined flavour: the fact balance sheet is always different according to various goals it would reach, could be understood as the Hegelian sentence “anything is real, is therefore rational” and no accounting standard could exist. The problem is not only related to Colletti’s thought but to the whole Italian classical business economics school.

great areas, according to formal criteria: ‘accounting recordings’ and ‘not accounting recordings’. This formal distinction, however, is only formal – as said by himself – and is not able to contribute to progress in our disciplines. Sometimes the expression ‘business statistics’ is heard to define all ‘not accounting recordings’, but this expression is not correct for many reasons: rarely business recordings fully adopt a statistical method and there are certainly recordings which does not concern at all the matter of statistics, even if they do not pass through the mean of ‘account’. This terminological use, then, is to be abandoned.

A more useful classification of ‘numbers’ could be – always in his opinion – that one of his master D’Ippolito who distinguished values from exterior business phenomena (in contemporary Williamson’s terminology, we might say numbers from *market*) and values from interior business phenomena (similarly, we might say numbers from *hierarchy*), in their turn ordered according to the degree of subjectivity.

How it is possible to isolate subjective construction that makes heterogeneous sizes become homogeneous as it happens in balance sheet?

A possible solution could be the construction of ‘pure’ accounts where to record elementary events, that are strictly homogeneous each other, and the derivation, afterwards, of all other constructions according to the different goals of knowledge. The Author, however, sees the practical hardness of that because of several reasons, not least that of ‘time’ that makes inevitably different recordings each other.

Inexistence of ‘pure’ accounts makes, in its turn, impossible or hardly possible the aggregation of business data by a statistician to obtain useful information for social ends.

Another interesting suggestion he left us was that one which reminds us of the fact numbers assume different meanings in different socio-economic orders: in socialist countries – then we were in the very middle of Cold War with a strong contraposition between two radically alternative systems of production – there is no meaningful price to refer to for above mentioned ‘exterior’ business phenomena and we have to make resort to quantity of work embedded in products according to value-work theory. It is interesting to register how Colletti, even though being clearly a moderate, makes a *very soft* critique against ineffectiveness of socialist systems (for example, he quietly arguments about Sta-

lin's thought), all inside business economics theory, neglecting, by that way, a merely ideological contraposition and revealing as well a remarkable elegance and equilibrium in matters involving personal convictions as politics is.

2.4 Time

"Time" was written just few years after "Number" and, for what concerns substance, is very similar to it. It, really, represents as well codification of phenomena, this time by means of 'time' symbols rather than by means of 'numerical' symbols. Nonetheless, for what concerns form, it recalls "Experience": here too, as a matter of fact, we find two parts; the former devoted to 'time' in general, in Business Economics as a whole and in business economics phenomena, the latter to the same into the three traditional parts of Business Economics (Organization, Management, and Recording).

He starts by saying it is not possible to approach phenomena without considering 'time' either in their dynamics or in observer's attitude. Looking over literature concerning 'time', he shows really himself to be upset about it: 'general' (that is, mainly, philosophical) literature is too large, even larger than experience's and number's ones, so that it seems hardly possible to reach an acceptable synthesis; at the opposite 'business economics' one is too narrow and recent (nearly nothing before Zappa, explicitly quoted in Preface).

Even in this work Colletti poses a lot of questions without supplying always the answers in the above mentioned 'problem setting' attitude prevailing over the most popular 'problem solving' one. To give some examples of general and particular investigated problems: does a unique notion of time exist? or do different forms of time exist? is time liable to be measured? if it is, does a unique unit of size exist? has it one dimension or more? is time a particular kind of space or not? is it an exterior or interior reality, or just a convention? are all mentioned problems of interest for business economics scholars? is time to begin to face these problems for future perspectives of our disciplines or not?

The Author, briefly, does not think 'time' is an absolute reality. We have a sort of absolute time, whose unit is not at all absolute but near to

it being determined by the rotation of Earth round its axis; Colletti calls it ‘exterior’ time, but he says too it has not much relevance for our studies. In Business Economics ‘time’ does not show a constant rhythm, phenomena have a *sui generis* time or a *business economics time* or an ‘interior’ time, measured by Accounting (when it can) through appropriate means of recording.

As done for ‘experience’, he supplies a rapid survey of ancient, medieval, modern and contemporary thought about ‘time’. Without going any further in this run, we just remember he shared scholars into three main schools: ‘objectivists’, ‘subjectivists’ and ‘object-subjectivists’. After all he concludes that in any science investigating problems out of time is simply nonsense and time is not only ‘time’ of phenomena, but more ‘time’ of researchers who investigate about them. They, in Business Economics, work with Businesses, then – let us just remember it once more again – with *systems of operations* where ‘exterior time’ is only a starting-point for further analysis. To understand properly what ‘interior time’ is in author’s mind, we need quickly introduce four key concepts which compose it:

- *rhythm*;
- *becoming*;
- *persistence*;
- *duration*.

The first represent the density (quality, number and direction) of ‘moments’ (that is, relevant events) we find inside exterior time. Yet, one needs distinguish rhythm of events and rhythm of recording, this last one tied to the first but often different.

The second refers to projection from past to future. Future is seen as an infinite and multivariate set of directions sharing each other only the starting point (and then underlying the *path-dependence* of every business coordination).

The third refers to the fact that phenomena are considered by Business Economics (and then by Accounting) only if they persist over a sensitive interval of time: others are but irrelevant accidents just as they have never been happening.

The fourth refers to events apparently in transformation but really persistent about whom fixing a starting point and a lasting one is possible.

The concept of 'time', especially if thought as 'interior time', is abundantly conventional. We need extend then the mean of symbols, already presented in "Number", to 'time' determinations and then we will have a semantics of time as well as we have seen about numbers. Combining numbers and time we will have the key instruments of Accounting to manage business phenomena particularly, but generally to manage every kind of phenomena.

Particularly, consideration of time would be good for studying dynamics of relations among scientific phenomena. Traditional studies in Accounting, unfortunately, should have suffered from a generally accepted 'static' view of phenomena (perhaps here the Author retakes the leitmotiv of Italian School about Zappa's scientific revolution that would give a true 'dynamic' study of phenomena by means of a new science, Business Economics exactly!).

Phenomena flow along time without interruptions and past is deeply tied to future and *vice versa*. But otherwise we share continuously (in 'knowledge' we could say) what is united (in 'existence' we could say as well). Accounting makes past and future become present only in a symbolic way (not in reality then) and the most of problems we find is in representing in symbols future because it does not still exist; but it is just this foresight the core of Business. Nor all past is relevant and then passes through accounting determinations, because we look only to past be relevant for future.

Phenomena spread along time are generally called 'terms' (events, facts, decisions) and every enquiry about business coordinations moves its first steps from the choice of 'relevant' terms to be considered. Path from terms to symbols is hard to define in absolute (even there we see the 'constructivist' approach of the Author) and he says that *before* we build our history and only *after* we study it in order to better guide our future. Quality of choice and then quality of Business is therefore essentially determined by the gap between relevant terms (subject of investigation of Business Economics) and symbols representing them (subject of investigation of Accounting).

As we have said before, he faced also problems of 'time' in the tra-

ditional parts of Business Economics (Organization, Management, and Recording-Accounting).

Without going any further, here too, in deepness through his thought, we may limit our survey on the most remarkable passages.

About Organization we remember that:

- organizing is nearly ever building 'time planes' where dynamics is simply the essence of whole construction;
- life of Businesses is life of organizations or 'economical institutions' marked at its borders by two great events to be investigated: 'birth' or – better – establishment and 'death' or – better – closing down;
- dealing with bodies inside organizations and then with human beings, organization ought to relate 'business' time with 'personal' time as the perceptions of time and becoming by personnel's points of view;
- preference acknowledged to human relations school leads the author to introduce the complex theme of conciliation between disposition of work along time for business needs and the different value of different portions of time for workers (night time, holidays, etc.).

About Management we remember that:

- 'time' in management is above all coordination of cycles of funding, investments and realizations;
- all cycles are distinguished according to the different duration of factors: short, medium and long run;
- coordinations in management are irreversible in time;
- time operates in extra-business relations too.

About Recording-Accounting we remember that:

- Accounting sees always at 'present' organization and management terms, either read by recordings which are ultimately constructions of spirit, not reality: Business is dynamic and continuous but Recording is at the most only 'compared static' and then discontinuous;

- a hiatus then does exist between phenomena and ‘time’ symbols representing them: ‘we may fix by means of symbols, signs’ but effectiveness of symbolization ‘is bounded by the aptitude of observation and remembering of past and by the aptitude of foreseeing of the subject’;
- Recording supervises determination of duration of coordinations and ties those durations to ‘administrative’ or financial periods (as for example the case of amortization quotas are imputed to financial years);
- meaning of charges, revenues, other flows (but even of stocks) is a nonsense out of the time referred to;
- symbols of time combine themselves with numerical ones to build a discipline (of a semiotic nature, we may say, at least *in nuce* even if still not made explicit) which can ‘represent, in the most various shapes, phenomena, events and business coordinations’.

3. Other Major Works

In this point we are able just to mention some of the other major works Colletti wrote in his long life of research.

“Contribution to Determination of share Value in Businesses with Goodwill” had two editions: the former in 1954, the latter, enlarged, in 1964. There, holding fast to “Income Accounting System” of Zappa, he starts from the assumption that goodwill is not ordinarily recorded in bookkeeping and then a potentially undetermined field of research opens in determination of share values because of the presence of that unrecorded asset. The most remarkable conclusion we may recall is his fight against *analytical* methods that think a ‘quota’ of a ‘value’ is simply the ‘value’ of the ‘quota’. In symbols (unfortunately neglected by him, preferring a quite rhetoric style):

$$\text{Val} [\text{Quo}(X)] = \text{Quo} [\text{Val}(X)] \Rightarrow \Sigma \text{Quo} (X) = \text{Val} (X).$$

Against this view he opposed a *synthetic* method where every evaluation is ‘perspective’ and then where the value of a ‘quota’ is the difference from the value of all net worth diminished by the ‘quota’ to the whole net worth: the two determinations are of two different Busi-

nesses with different criteria of evaluation and the second member of the difference is not simply a percentage of the first member. The value of the so determined ‘quota’ is not still ‘objective’, ‘true’, but, at least, not irrational (or, by a typical English word, we may say ‘fair’). Again in symbols the two operations of percentage and evaluation are not homogeneous each other:

$$\text{Val}[\text{Quo}(X)] = \text{Val}(X) - \text{Val}[X - \text{Quo}(X)] \Rightarrow \Sigma \text{Quo}(X) \neq \text{Val}(X).$$

“Programmes and Choices in Business Economics” had two editions too: the former (“Programmes and Choices in business Recordings”) in 1957, the latter, enlarged likewise, in 1964. This study is technical enough to be not liable to be fully presented here. Anyway we may remember that Colletti, in D’Ippolito tracks, thought that:

- Businesses are systems of operations;
- the highest (more abstract) part of Businesses, the decisions, constitute the Administration, object of Business Economics;
- Programmes and Choices are, in other words, the Administration;
- Programmes are even higher than Choices;
- Programmes lead Choices and are formally appointed by Accounting;
- The complexity, both qualitative and quantitative, of phenomena does not pass through formal expression of Programmes;
- Even here accounting determinations are to be integrated with organization and management evaluations;
- Programmes and Choices are differentiated according to the species of Business and Environment (free market *vs.* socialism; public *vs.* private, etc.);
- Development of this work is related to ‘experience’, ‘number’ and ‘time’.

Worthy of particular note are any more:

- “Introduction to the Study of Business Economics – Business Calculation” (1945);

- “Saving «primitive raw material» of typical banking, industrial and trade management” (1954);
- “Municipal Firms – Organization, Management, Recording” (1st edition 1959, 2nd edition 1968);
- “Consolidated Balance Sheets of Municipal Trusts” (1st edition 1961, 2nd edition 1970);
- “Outlines for a Rational Incentive System for Southern Businesses” (1973);
- “New Horizons on Researches about «Experience», «Number» and «Time» in Business Economics Sciences on Threshold of 2000” (last lesson at University of Palermo, 1989).

4. Legacy of Colletti

Nicola Colletti died nearly three years ago. The most of his scientific production ended practically twenty or thirty years ago. Is there still anything alive of his thought? Is there anyone who pursues his route? Which is the interest, historical or theoretical, of studying it? In what follows we will try just to begin to outline some answers to these not easy questions.

The meaning of Colletti’s work is to be understood in tight and deep relation with his master’s. D’Ippolito had introduced Zappa’s scientific paradigm in Palermo University where, on the other hand, he found a favourable ground, being Palumbo’s thought near to his. Notwithstanding that, all D’Ippolito’s work was linked more to traditional Accounting than to ‘new science’ of Business Economics. That was partially true also for Colletti: someone of his disciples heard him to say often of the importance “of keeping high the glorious name of «*Ragioneria*»”, his didactics was nearly ever of Accounting, in the last years of teaching he was disappointed by the decision of the majority of his disciples to turn the old name of ‘his’ Institute (“of Accounting and of business economics Research”) into the new one (“of Business Economics Sciences”). We say however ‘partially’ because the most or at least the ‘best’ of his scientific production was explicitly entitled to Business Economics: the “Trilogy”, chiefly, but “Programmes and

Choices” too. The centrality of Accounting in Business Economics was differently conceived by D’Ippolito and by Colletti. The former thought of a unique science under three possible points of view: he privileged that from ‘determinations’ point of view (Accounting, of course), the oldest and then the most mature of the three, but enlightened by new Business Economics and against the oldest arid conceptions of the same. The latter thought too of a unique science but with – as we tried to demonstrate before – an ‘accounting’ heart because of the liability of ‘symbols’ to represent, more or less, administrative phenomena.

D’Ippolito’s and Colletti’s works constitute, of course, jointly a *corpus* that now is waiting still for a historical interpretation, impossible to give now in these short notes. We are allowed only to say both Accounting tradition and Business Economics have been kept on after them in Palermo ⁽¹⁶⁾. In the form we do not record a faithful keeping of Colletti’s ideas, above all those of trilogy, but in substance they permeate not few of any recent works and they are a true key for finding inspirations of them. The most of Colletti’s disciples have built up a school of Business Economics, faithful to D’Ippolito’s and Colletti’s components in its ground but progressively spreading over new directions, not far from functionalist and professional perspectives and, mainly in the last years, exploring the field of business ethics too. Others study of Management and even of Organization, traditionally the least developed of the three conventional parts of Zappa’s Business Economics. But there is still a properly accounting tradition that goes on, along and beyond his tracks: by exploiting his intuition of ‘semantics of symbols’, it is trying now to build a truly ‘semiotic’ perspective on Accounting where distinction between ‘number’ and ‘time’ is set aside in favour of a close representation of all ‘space and time’ symbols could represent administrative operations and where not only ‘numbers’ represent Space but qualitative symbols too. The legacy of ‘ex-

⁽¹⁶⁾ But not elsewhere for Colletti; of course in Italy, not to speak of foreign countries, his work remained little known, either for the peripheral position of Palermo University, and for his reluctance to entertain strong academic relationships, and, also, for his unhappy editorial policy. This last weakness did not work for D’Ippolito too, whose cultural weight was certainly of greater remark in 20th century Italian accounting tradition, even for the fact he taught in several Italian universities throughout the country (Milan, Florence, Palermo, Bologna, Rome).

perience' is, finally, rather in attention toward 'methodological' problems of research than in specific conclusion he reached (above all the 'problem setting' attitude we have talked before, and the contraposition between oneness of 'existence' and plurality of 'knowledge').

As we have just said the whole work of Colletti would deserve a deeper historical investigation than this one. Here, however, we have tried to supply a comprehensive presentation of the personage that we hope to have reached its provisional aims.